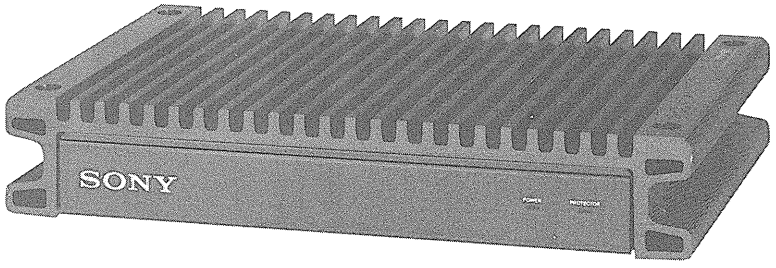
XM-5520

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model



SPECIFICATIONS

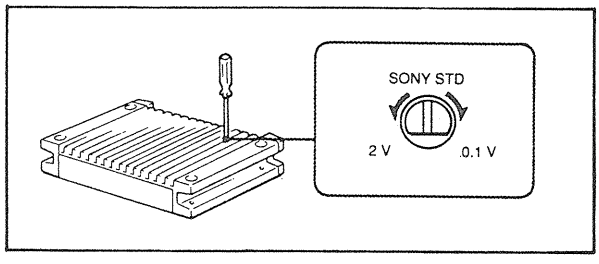
AUDIO POWER SPECIFICATIONS
POWER OUTPUT AND TOTAL HARMONIC DISTORTION 55 watts per channel minimum continuous average power into 4 ohms, both channels driven from 20–20,000 Hz with no more than 0.08% total harmonic distortion per Car Stereo Ad Hoc Committee standards.

Power supply system
Pulse power supply circuitry
Input Car stereo input (phono jack)
Outputs Speaker outputs
Speaker impedance
2–8 ohms
Maximum power output
100 watts per channel minimum RMS at 4 ohms
240 watts (monaural) at 4 ohms
Frequency response
8 Hz–100 kHz $^{+0}_{-3}$ dB (4 ohms)
Harmonic distortion
0.005%
Input level adjustment range
0.1 – 2 V
Power requirements
12 V DC car battery (negative ground)
Current drain 18 A (at rated output)
Input remote current
5 mA
Dimensions Approx. 310 × 55 × 200 mm (w/h/d) ($12^1/_4 \times 2^1/_4 \times 7^7/_8$ inches)
Weight Approx. 3.5 kg (7 lb. 11 oz.)
Accessories supplied
Mounting screws (4)

Design and specifications subject to change without notice.

Level Adjustment Control

The input level can be varied with this control. Use it to adjust the input sound level when using source equipment of other manufacturers. Be sure to set the control to SONY STD if the unit is connected to a SONY car stereo. Turn it to 0.1 V when the input level of the cassette car stereo or CD player seems low.



使用時は添付資料も参照のこと
Refer to the additional documents

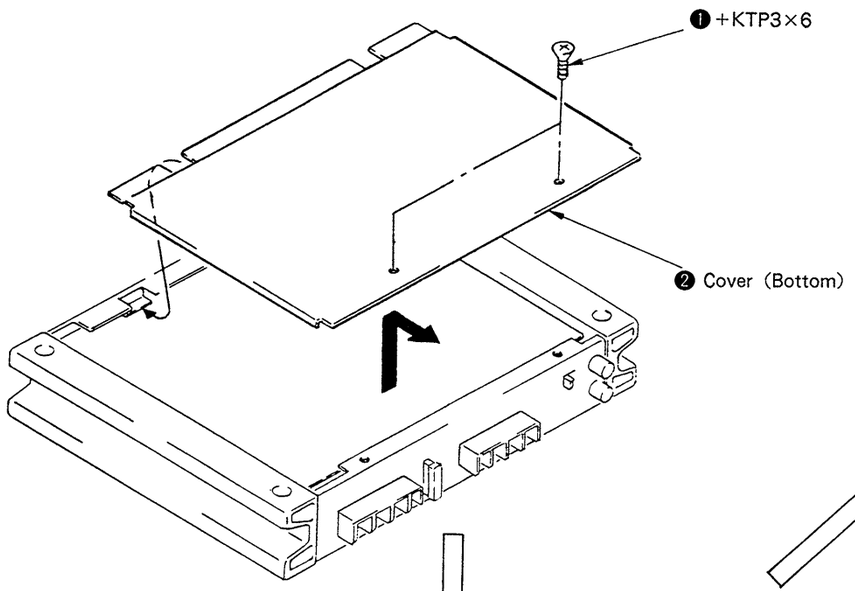
STEREO POWER AMPLIFIER

SONY®

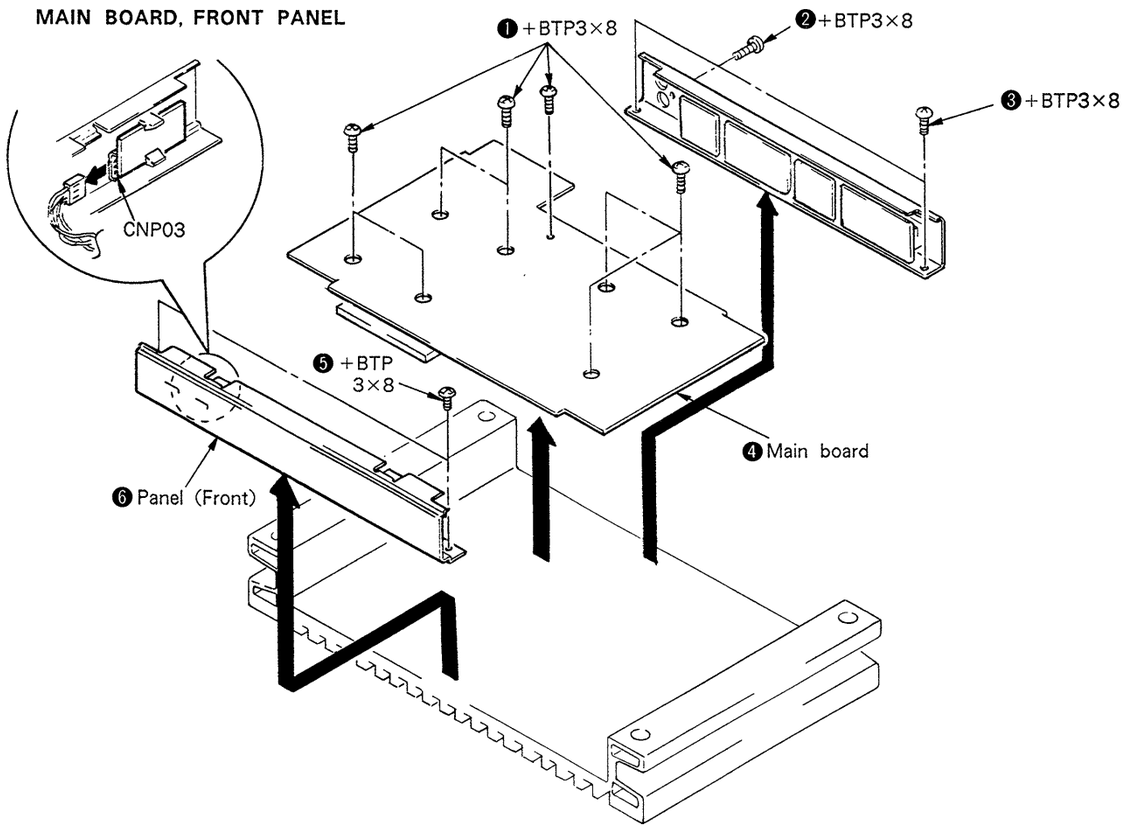
SECTION 1
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

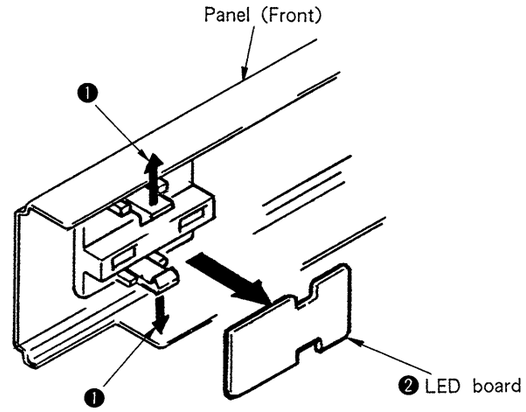
COVER (BOTTOM)



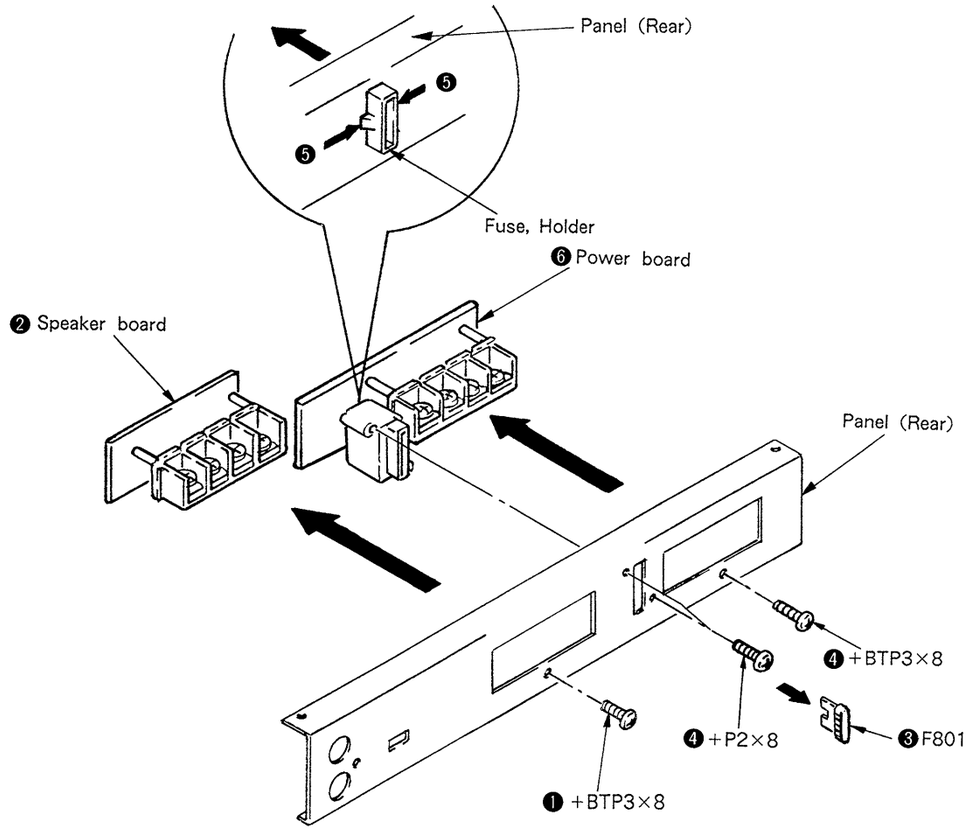
MAIN BOARD, FRONT PANEL



LED BOARD



DIN BOARD, SPEAKER BOARD, POWER BOARD



SECTION 2
DIAGRAMS

Semiconductors Lead Layout

μPC1298V

2SB740
2SC2655

GL8PG24
SLP151B-60

DTA114EF
2SC2021
2SD1055

2SC2784
2SC2785-HFE

RD10ESB2
RD18ESB2
RD24ESB3
RD33ESB2
RD6.8ESB2
1SS120

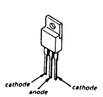
DTA124ES

2SK736

30DF2

2SA1232
2SC3012

CTG-22R



2SB631KE
2SB1151

CTG-22S

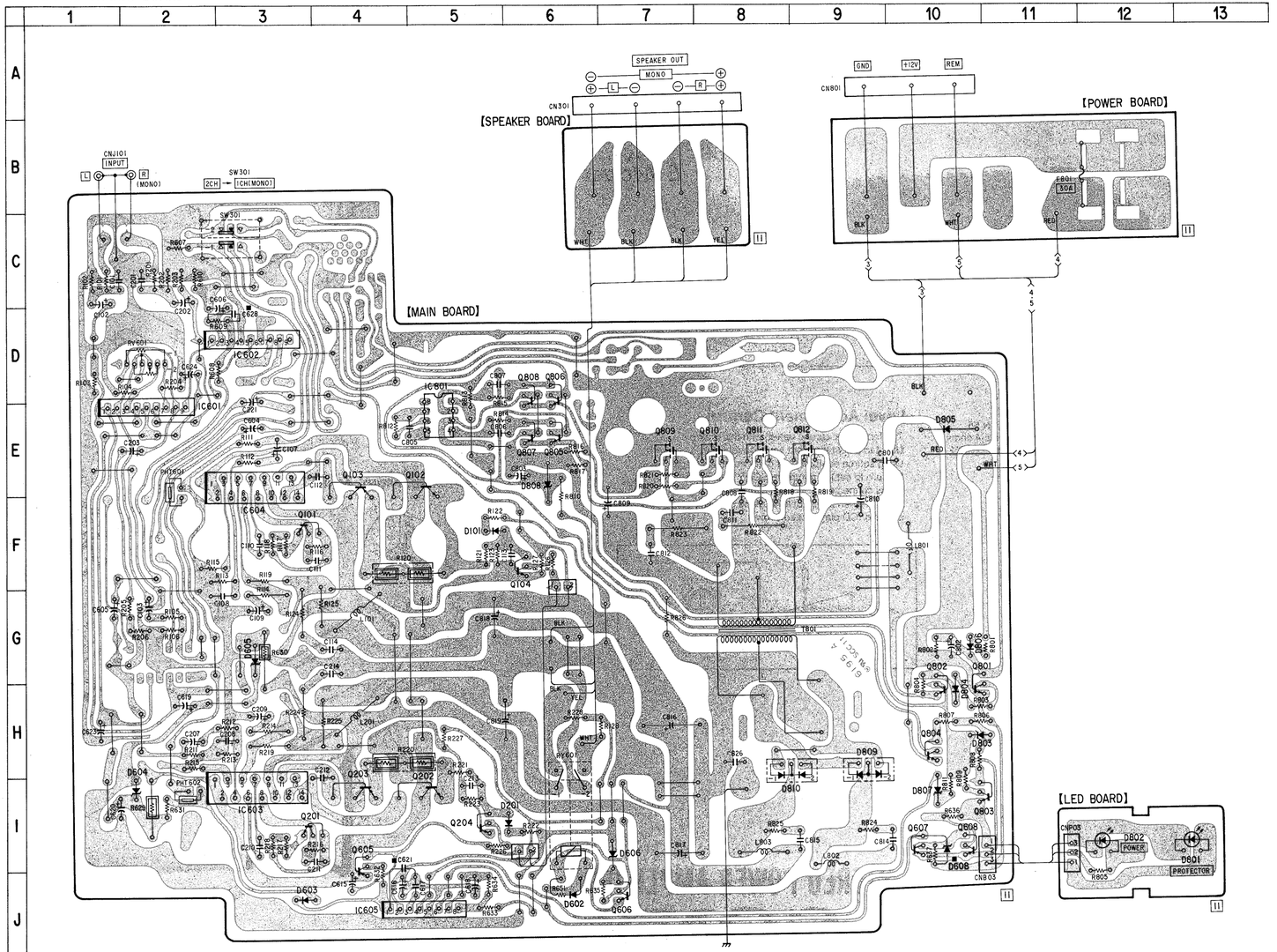
• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
IC601	E-2	Q808	D-6
IC602	D-2	Q809	E-7
IC603	I-3	Q810	E-8
IC604	E-3	Q811	E-8
IC605	J-5	Q812	E-9
IC801	E-5		
		D101	F-5
Q101	E-3	D201	I-6
Q102	E-5	D602	J-6
Q103	E-4	D603	J-3
Q104	F-6	D604	I-2
Q201	I-3	D605	G-3
Q202	I-5	D606	I-7
Q203	I-4	D608	I-10
Q204	I-5	D801	I-13
Q605	I-4	D802	I-12
Q606	J-7	D803	H-10
Q607	I-10	D804	H-10
Q608	I-10	D805	E-10
Q801	H-10	D806	G-10
Q802	H-10	D807	H-10
Q803	I-10	D808	E-6
Q804	H-10	D809	H-9
Q805	E-6	D810	H-8
Q806	D-6		
Q807	E-6		

Note :

- ○—: parts extracted from the component side.
- ●—: parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ▨ : Pattern on the side which is seen.

2-1. PRINTED WIRING BOARD



【MAIN BOARD】

【POWER BOARD】

【SPEAKER BOARD】

【LED BOARD】

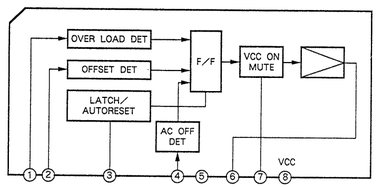
Note :

- All capacitors are in μF unless otherwise noted. pF : μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : nonflammable resistor.
- B+ : B+ Line
- B− : B− Line
- Power voltage is dc 14.4V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : 2CH
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : L-CH
  : R-CH

IC BLOCK DIAGRAM

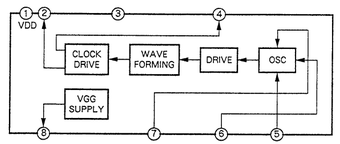
IC605

μPC1237HA



IC801

MN3102

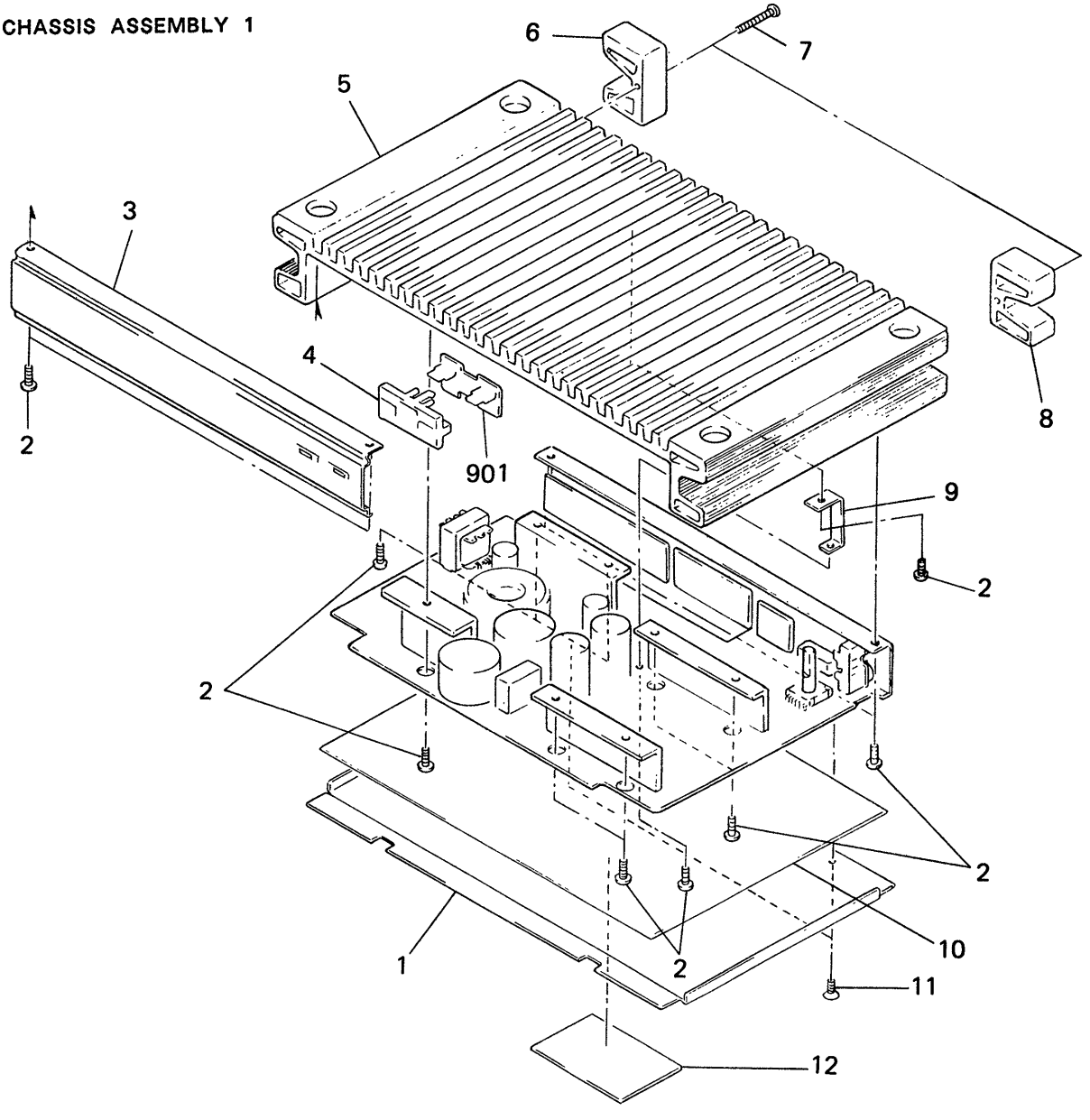


SECTION 3
EXPLODED VIEWS

NOTE:

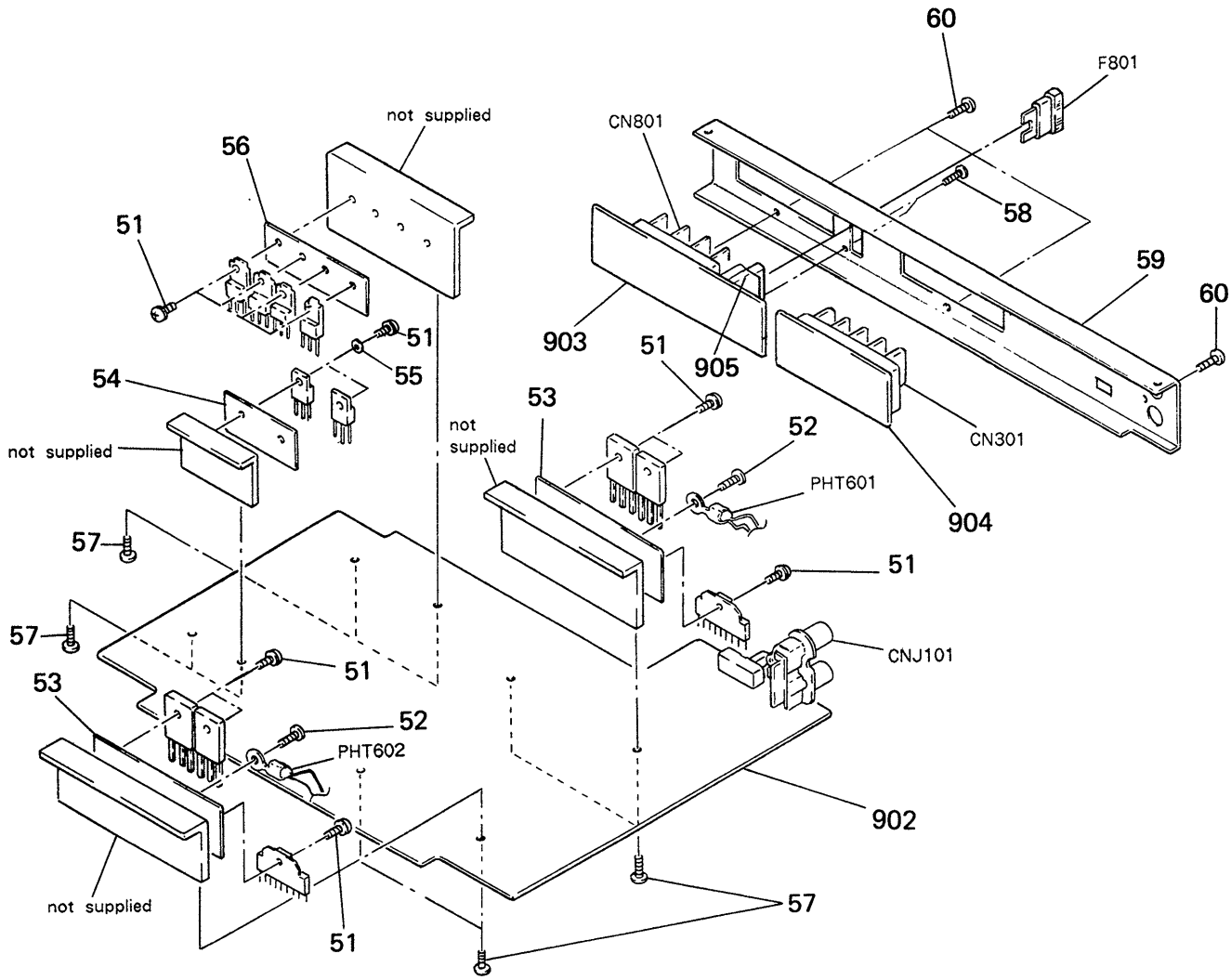
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.

(1) CHASSIS ASSEMBLY 1



No.	Part No.	Description	Remarks
1	*3-396-130-01	COVER (BOTTOM)	
2	7-685-646-79	SCREW +BTP 3X8 TYPE2 N-S	
3	3-396-118-01	(AEP,E).....PANEL (FRONT)	
	3-396-118-11	(US,Canadian)...PANEL (FRONT)	
4	3-396-126-01	HOLDER (LED)	
5	*3-396-127-01	HEAT SINK	
6	*3-395-816-01	PROTECTOR (LEFT)	
7	7-685-550-19	SCREW +BTP 3X16 TYPE2 N-S	
8	*3-395-817-01	PROTECTOR (RIGHT)	
9	*3-396-128-01	BRACKET	
10	*3-396-129-01	SHEET (NSULATING)	
11	7-685-245-19	SCREW +KTP 3X6 TYPE2 SLIT	
12	*3-395-810-01	(US,AEP,E)...LABEL, MODEL NUMBER	
	3-395-813-01	(Canadian)...LABEL, MODEL NUMBER	
901	*1-632-602-11	PC BOARD, LED	

(2) CHASSIS ASSEMBLY 2



No.	Part No.	Description	Remarks
51	7-682-649-09	SCREW +PSW 3X10	
52	7-685-645-79	SCREW +P 3X6 TYPE2 NON-SLIT	
53	3-396-123-01	SHEET (A), INSULATING	
54	3-396-125-01	SHEET (C), INSULATING	
55	2-832-003-00	BUSH, INSULATING	
56	3-396-124-01	SHEET (B), INSULATING	
57	7-685-645-79	SCREW +BTP 3X6 TYPE2 N-S	
58	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	
59	*3-396-119-01	PANEL (REAR)	
60	7-685-646-79	SCREW +BTP 3X8 TYPE2 N-S	

No.	Part No.	Description	Remarks
902	*A-3216-986-A	PC BOARD ASSY, MAIN	
903	*1-632-601-11	PC BOARD, POWER	
904	*1-632-600-11	PC BOARD, SPEAKER	
905	1-533-226-11	HOLDER, FUSE (BRAID)	
CN301	1-537-252-11	TERMINAL BOARD (4P)(SPEAKER OUT)	
CN801	1-537-251-11	TERMINAL BOARD (3P)(REM,+12V,GND)	
CNJ101	1-569-265-11	JACK, PIN 2P (INPUT)	
F801	1-532-947-11	FUSE (BRADE TYPE) (AUTO FUSE)(30A)	
PHT601	1-800-965-00	THERMISTOR	
PHT602	1-800-965-00	THERMISTOR	

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

Ref.No.	Part No.	Description			
901	*1-632-602-11	PC BOARD, LED			
902	*A-3216-986-A	PC BOARD ASSY, MAIN			
903	*1-632-601-11	PC BOARD, POWER			
904	*1-632-600-11	PC BOARD, SPEAKER			
905	1-533-226-11	HOLDER, FUSE (BRAID)			
C101	1-102-110-00	CERAMIC	220PF	10%	50V
C102	1-124-791-11	ELECT	1MF	20%	50V
C103	1-123-356-00	ELECT	10MF	20%	35V
C107	1-123-356-00	ELECT	10MF	20%	35V
C108	1-102-106-00	CERAMIC	100PF	10%	50V
C109	1-124-443-00	ELECT	100MF	20%	6.3V
C110	1-102-953-00	CERAMIC	18PF	5%	50V
C111	1-102-114-00	CERAMIC	470PF	10%	50V
C112	1-161-057-00	CERAMIC	0.033MF	10%	50V
C113	1-161-059-00	CERAMIC	0.047MF	10%	50V
C114	1-161-057-00	CERAMIC	0.033MF	10%	50V
C201	1-102-110-00	CERAMIC	220PF	10%	50V
C202	1-124-791-11	ELECT	1MF	20%	50V
C203	1-123-356-00	ELECT	10MF	20%	35V
C207	1-123-356-00	ELECT	10MF	20%	35V
C208	1-102-106-00	CERAMIC	100PF	10%	50V
C209	1-124-443-00	ELECT	100MF	20%	6.3V
C210	1-102-953-00	CERAMIC	18PF	5%	50V
C211	1-102-114-00	CERAMIC	470PF	10%	50V
C212	1-161-057-00	CERAMIC	0.033MF	10%	50V
C213	1-161-059-00	CERAMIC	0.047MF	10%	50V
C214	1-161-057-00	CERAMIC	0.033MF	10%	50V
C604	1-123-356-00	ELECT	10MF	20%	35V
C605	1-123-356-00	ELECT	10MF	20%	35V
C606	1-123-356-00	ELECT	10MF	20%	35V
C615	1-124-902-00	ELECT	0.47MF	20%	50V
C616	1-126-176-11	ELECT	220MF	20%	6.3V
C617	1-102-129-00	CERAMIC	0.01MF	10%	50V
C618	1-124-963-11	ELECT	33MF	20%	16V
C619	1-124-477-11	ELECT	47MF	20%	16V
C620	1-124-477-11	ELECT	47MF	20%	16V
C624	1-123-356-00	ELECT	10MF	20%	16V
C628	1-102-959-00	CERAMIC	22PF	5%	50V
C632	1-102-110-00	CERAMIC	220PF	10%	50V
C801	1-102-119-00	CERAMIC	0.0015MF	10%	50V
C802	1-124-925-11	ELECT	2.2MF	20%	50V
C803	1-123-356-00	ELECT	10MF	20%	35V
C805	1-102-114-00	CERAMIC	470PF	10%	50V
C806	1-161-061-11	CERAMIC	0.068MF	10%	50V
C807	1-161-061-11	CERAMIC	0.068MF	10%	50V
C808	1-161-063-00	CERAMIC	0.1MF	10%	50V
C809	1-124-556-11	ELECT	2200MF	20%	16V
C810	1-124-556-11	ELECT	2200MF	20%	16V
C811	1-161-057-00	CERAMIC	0.033MF	10%	50V
C812	1-161-057-00	CERAMIC	0.033MF	10%	50V
C814	1-102-112-00	CERAMIC	330PF	10%	50V
C815	1-102-112-00	CERAMIC	330PF	10%	50V
C816	1-126-992-11	ELECT	6800MF	20%	35V
C817	1-126-992-11	ELECT	6800MF	20%	35V
C818	1-126-995-11	ELECT	3300MF	20%	35V
C819	1-126-995-11	ELECT	3300MF	20%	35V
C820	1-161-063-00	CERAMIC	0.1MF	10%	50V
CN301	1-537-252-11	TERMINAL BOARD (4P)(SPEAKER OUT)			
CN801	1-537-251-11	TERMINAL BOARD (3P)(REM,+12V,GND)			
CNJ101	1-569-265-11	JACK, PIN 2P (INPUT)			
D101	8-719-912-20	DIODE 1SS120			
D201	8-719-912-20	DIODE 1SS120			
D602	8-719-912-20	DIODE 1SS120			
D603	8-719-912-20	DIODE 1SS120			
D604	8-719-110-17	DIODE RD10ESB2			
D605	8-719-110-17	DIODE RD10ESB2			
D606	8-719-110-63	DIODE RD24ESB3			
D608	8-719-110-78	DIODE RD33ES-B2			
D801	8-719-938-11	DIODE SLP151B-60 (PROTETOR)			
D802	8-719-979-90	DIODE GL8PG24 (POWER)			
D803	8-719-110-49	DIODE RD18ESB2			
D804	8-719-109-97	DIODE RD6.8ESB2			
D805	8-719-230-02	DIODE 30DF2			
D806	8-719-912-20	DIODE 1SS120			
D807	8-719-109-97	DIODE RD6.8ESB2			
D808	8-719-110-17	DIODE RD10ESB2			
D809	8-719-312-68	DIODE CTG-22R			
D810	8-719-312-69	DIODE CTG-22S			
F801	1-532-947-11	FUSE (BRADE TYPE) (AUTO FUSE)(30A)			
IC601	8-759-701-25	IC NJM2068D-D			
IC602	8-759-701-25	IC NJM2068D-D			
IC603	8-759-109-06	IC UPC1298V			
IC604	8-759-109-06	IC UPC1298V			
IC605	8-759-111-68	IC UPC1237HA			
IC801	1-806-944-11	IC MN3102			
L101	*1-428-101-11	COIL, AIR-CORE			
L201	*1-428-101-11	COIL, AIR-CORE			
L801	1-424-323-11	COIL, CHOKE 0.25MMH			

Ref.No.	Part No.	Description
L802	1-409-399-11	COIL, SN
L803	1-409-399-11	COIL, SN
PHT601	1-800-965-00	THERMISTOR
PHT602	1-800-965-00	THERMISTOR
Q101	8-729-902-11	TRANSISTOR 2SC2021
Q102	8-729-102-57	TRANSISTOR 2SC3012
Q103	8-729-102-47	TRANSISTOR 2SA1232
Q104	8-729-178-43	TRANSISTOR 2SC2784
Q201	8-729-902-11	TRANSISTOR 2SC2021
Q202	8-729-102-57	TRANSISTOR 2SC3012
Q203	8-729-102-47	TRANSISTOR 2SA1232
Q204	8-729-178-43	TRANSISTOR 2SC2784
Q605	8-729-900-38	TRANSISTOR DTA114EF
Q606	8-729-905-52	TRANSISTOR 2SD1055
Q607	8-729-900-63	TRANSISTOR DTA124ES
Q608	8-729-900-63	TRANSISTOR DTA124ES
Q801	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q802	8-729-822-58	TRANSISTOR 2SB631KE
Q803	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q804	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q805	8-729-265-52	TRANSISTOR 2SC2655
Q806	8-729-265-52	TRANSISTOR 2SC2655
Q807	8-729-374-02	TRANSISTOR 2SB740
Q808	8-729-374-02	TRANSISTOR 2SB740
Q809	8-729-143-92	TRANSISTOR 2SK736
Q810	8-729-143-92	TRANSISTOR 2SK736
Q811	8-729-143-92	TRANSISTOR 2SK736
Q812	8-729-143-92	TRANSISTOR 2SK736
R101	1-249-417-11	CARBON 1K 5% 1/4W
R102	1-249-441-11	CARBON 100K 5% 1/4W
R103	1-249-429-11	CARBON 10K 5% 1/4W
R104	1-249-413-11	CARBON 470 5% 1/4W
R105	1-249-429-11	CARBON 10K 5% 1/4W
R106	1-249-423-11	CARBON 3.3K 5% 1/4W
R110	1-249-431-11	CARBON 15K 5% 1/4W
R111	1-249-441-11	CARBON 100K 5% 1/4W
R112	1-249-417-11	CARBON 1K 5% 1/4W
R113	1-249-433-11	CARBON 22K 5% 1/4W
R114	1-249-414-11	CARBON 560 5% 1/4W
R115	1-249-431-11	CARBON 15K 5% 1/4W
R116	1-249-420-11	CARBON 1.8K 5% 1/4W
R117	1-249-417-11	CARBON 1K 5% 1/4W
R118	1-249-401-11	CARBON 47 5% 1/4W
R119	1-249-433-11	CARBON 22K 5% 1/4W
R120	1-219-128-11	RES,METAL PLATE 0.15X2 5W

Ref.No.	Part No.	Description
R121	1-249-426-11	CARBON 5.6K 5% 1/4W
R122	1-249-438-11	CARBON 56K 5% 1/4W
R123	1-249-441-11	CARBON 100K 5% 1/4W
R124	1-249-393-11	CARBON 10 5% 1/4W
R125	1-249-393-11	CARBON 10 5% 1/4W
R126	1-249-429-11	CARBON 10K 5% 1/4W
R127	1-249-441-11	CARBON 100K 5% 1/4W
R128	1-249-441-11	CARBON 100K 5% 1/4W
R201	1-249-417-11	CARBON 1K 5% 1/4W
R202	1-249-429-11	CARBON 10K 5% 1/4W
R203	1-249-441-11	CARBON 100K 5% 1/4W
R204	1-249-413-11	CARBON 470 5% 1/4W
R205	1-249-429-11	CARBON 10K 5% 1/4W
R206	1-249-423-11	CARBON 3.3K 5% 1/4W
R211	1-249-441-11	CARBON 100K 5% 1/4W
R212	1-249-417-11	CARBON 1K 5% 1/4W
R213	1-249-433-11	CARBON 22K 5% 1/4W
R214	1-249-414-11	CARBON 560 5% 1/4W
R215	1-249-431-11	CARBON 15K 5% 1/4W
R216	1-249-420-11	CARBON 1.8K 5% 1/4W
R217	1-249-417-11	CARBON 1K 5% 1/4W
R218	1-249-401-11	CARBON 47 5% 1/4W
R219	1-249-433-11	CARBON 22K 5% 1/4W
R220	1-219-128-11	RES,METAL PLATE 0.15X2 5W
R221	1-249-426-11	CARBON 5.6K 5% 1/4W
R222	1-249-438-11	CARBON 56K 5% 1/4W
R223	1-249-441-11	CARBON 100K 5% 1/4W
R224	1-249-393-11	CARBON 10 5% 1/4W
R225	1-215-857-11	METAL OXIDE 10 5% 1W F
R226	1-249-429-11	CARBON 10K 5% 1/4W
R227	1-249-441-11	CARBON 100K 5% 1/4W
R228	1-249-441-11	CARBON 100K 5% 1/4W
R607	1-249-441-11	CARBON 100K 5% 1/4W
R608	1-249-437-11	CARBON 47K 5% 1/4W
R609	1-249-437-11	CARBON 47K 5% 1/4W
R610	1-249-441-11	CARBON 100K 5% 1/4W
R629	1-216-432-00	METAL OXIDE 820 5% 1W F
R630	1-216-432-00	METAL OXIDE 820 5% 1W F
R631	1-249-431-11	CARBON 15K 5% 1/4W
R632	1-249-437-11	CARBON 47K 5% 1/4W
R633	1-249-429-11	CARBON 10K 5% 1/4W
R634	1-249-438-11	CARBON 56K 5% 1/4W
R635	1-249-417-11	CARBON 1K 5% 1/4W
R636	1-249-421-11	CARBON 2.2K 5% 1/4W
R637	1-249-429-11	CARBON 10K 5% 1/4W

Ref.No.	Part No.	Description			
R651	1-249-420-11	CARBON	1.8K	5%	1/4W
R801	1-249-423-11	CARBON	3.3K	5%	1/4W
R802	1-249-421-11	CARBON	2.2K	5%	1/4W
R803	1-249-417-11	CARBON	1K	5%	1/4W
R804	1-249-417-11	CARBON	1K	5%	1/4W
R805	1-249-431-11	CARBON	15K	5%	1/4W
R806	1-249-425-11	CARBON	4.7K	5%	1/4W
R807	1-249-429-11	CARBON	10K	5%	1/4W
R808	1-249-417-11	CARBON	1K	5%	1/4W
R809	1-249-421-11	CARBON	2.2K	5%	1/4W
R810	1-249-409-11	CARBON	220	5%	1/4W
R811	1-249-423-11	CARBON	3.3K	5%	1/4W
R812	1-249-432-11	CARBON	18K	5%	1/4W
R813	1-249-417-11	CARBON	1K	5%	1/4W
R814	1-249-426-11	CARBON	5.6K	5%	1/4W
R815	1-249-426-11	CARBON	5.6K	5%	1/4W
R816	1-249-417-11	CARBON	1K	5%	1/4W
R817	1-249-417-11	CARBON	1K	5%	1/4W
R818	1-249-393-11	CARBON	10	5%	1/4W
R819	1-249-393-11	CARBON	10	5%	1/4W
R820	1-249-393-11	CARBON	10	5%	1/4W
R821	1-249-393-11	CARBON	10	5%	1/4W
R822	1-249-405-11	CARBON	100	5%	1/4W
R823	1-249-405-11	CARBON	100	5%	1/4W
R824	1-249-405-11	CARBON	100	5%	1/4W
R825	1-249-405-11	CARBON	100	5%	1/4W
R826	1-249-421-11	CARBON	2.2K	5%	1/4W
RV601	1-238-826-11	RES, VAR, CARBON 10K (SONY STD)			
RY601	1-515-774-11	RELAY			
SW301	1-572-207-11	SWITCH, SLIDE (1CH/2CH)			
T801	1-449-918-11	TRANSFORMER, POWER			

ACCESSORY & PACKING MATERIAL

3-750-929-11	(AEP,E).....MANUAL, INSTRUCTION
3-750-929-21	(US,Canadian)...MANUAL, INSTRUCTION
3-750-929-41	(AEP).....MANUAL, INSTRUCTION
3-750-929-51	(E).....MANUAL, INSTRUCTION
*3-395-889-01	CUSHION (F)
*3-395-896-01	CUSHION (R)
3-395-839-12	SCREW (DIA. 5), TAPPING
*3-395-886-01	INDIVIDUAL CARTON
*3-704-282-01	BAG (STANDARD), PROTECTION

9-955-621-11

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SONY
SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model

CORRECTION-1

Correct your service manual as shown below.

☛ : **indicates corrected portion.**

Page	INCORRECT			CORRECT	
	No.	Part No.	Description	Part No.	Description
14	RV601	1-238-826-11	RES, VAR, CARBON 10K (SONY STD)	1-238-880-11 ☛	RES, VAR, CARBON 30K (SONY STD) ☛

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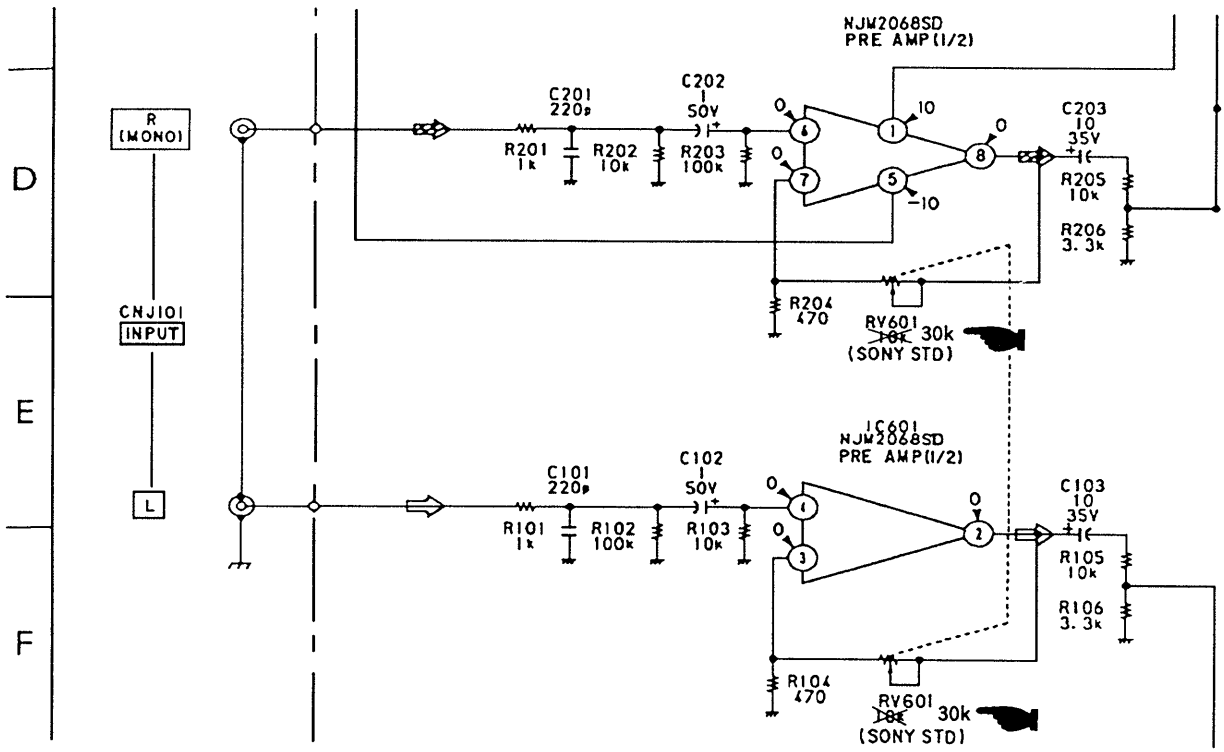
2-2. SCHEMATIC DIAGRAM (Location : D-4 to F-4)



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